

Sul D3 cont
kinase (rPTK) having amino acid sequence SEQ ID NO:8.

37. A vector comprising the nucleic acid molecule of Claim 36.

38. A host cell comprising the vector of Claim 37.

Sul D4
39. A method for preparing an HPTK6 receptor protein tyrosine kinase (rPTK) having amino acid sequence SEQ ID NO:8 comprising culturing the host cell of Claim 36 expressing said amino acid sequence SEQ ID NO:8 and recovering said amino acid sequence SEQ ID NO:8 from the host cell culture.

40. The isolated nucleic acid molecule of Claim 36, wherein said amino acid sequence is encoded by SEQ ID NO:7.

Sul D5
41. An isolated nucleic acid molecule which hybridizes under stringent conditions to a nucleic acid molecule having nucleic acid sequence SEQ ID NO:8 and complements thereof.

C4 cont
42. An isolated nucleic acid molecule which hybridizes under stringent conditions to a nucleic acid molecule having nucleic acid sequence SEQ ID NO:7 and complements thereof.

43. An isolated nucleic acid molecule which hybridizes under stringent conditions to a nucleic acid molecule having nucleic acid sequence SEQ ID NO:4 and complements thereof.

44. An isolated nucleic acid molecule which hybridizes under stringent conditions to a nucleic acid molecule having nucleic acid sequence SEQ ID NO:3 and complements thereof. - -

REMARKS

The specification has been amended to incorporate sequence identifiers. New Claims 31-44 are supported by Claims 26-30, and page 9, lines 18-27 of the specification. No question of new matter arises and entry of the amendments is respectfully requested.

Claims 31-44 are before the Examiner for consideration.

Examiner Interview

Applicants wish to thank the Examiner for the helpful and courteous interview conducted on March 21, 2000. The "Interview Summary" (Paper No. 7) memorialized the general discussion.

During the interview, Applicants proposed amendments to Claims 26-30 and presented arguments which Applicants believed would overcome the Examiner's cited references (i.e., Johnson et al., Di Marco et al., and Gilardi-Hebenstreit et al.). After a lengthy discussion with the Examiner, the Examiner proposed several claim amendments to overcome the pending rejections. In particular, the Examiner proposed claiming an encoded protein. The Examiner indicated that claims based on an encoded protein would be allowable if the Di Marco et al. reference was removed by a Declaration under 37 C.F.R. §1.131.

New Matter

On page 2 of the Office Action, in paragraph 2, the Examiner asserts that Applicants have attempted to incorporate new matter into the specification in the Preliminary Amendment filed January 25, 1999. Specifically, the Examiner states that the amendment to the first sentence of the specification which incorporates the content of one or more prior applications is new matter since the amendment was not referred to in the oath or declaration. (See MPEP §608.04(b)). In response, Applicants have amended the first sentence of the present specification to remove the incorporation of the prior applications by reference as requested by the Examiner.

Objection to Drawings

On page 2 of the Office Action, in paragraph 3, the Examiner has objected to the drawings as being improperly labeled, and has required that the Figures be corrected.

Additionally, the Examiner has required Applicants to amend the entire specification accordingly.

In response to this objection, Applicants have renumbered the Figures as suggested by the Examiner and amended the specification accordingly. Additionally, Applicants submit herewith informal drawings containing the Examiner's requested changes indicated in red. The Examiner is respectfully requested to acknowledge acceptance of these drawing changes.

Applicants will submit formal drawings to conform to the specification upon an issuance of a notice of allowance.

Objection to Specification

On page 3 of the Office Action, in paragraph 4, the Examiner has objected to the specification because it discusses specific sequences without employing sequence identifiers. In response, Applicants have amended the specification to reference the specific sequence identifier in all cases where reference was made to that particular sequence.

Rejection under 35 U.S.C. §112, first paragraph

On pages 3-7 of the Office Action, in paragraph 5, Claims 26-30 have been rejected under 35 U.S.C. §112, first paragraph, for lack of enablement.

In particular, the Examiner asserts that the claims potentially encompass a large genus of isolated nucleic acids encoding a large number of different polypeptides, both natural and manmade. However, the Examiner asserts that the specification only describes a single isolated nucleic acid encoding a single receptor tyrosine kinase which is of human origin (i.e., SEQ ID NO: 3).

Applicants have canceled Claims 26-30, thereby rendering this rejection moot. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw this

rejection.

Additionally, Applicants have added new Claims 31-44. Applicants submit that these newly added claims recite an isolated nucleic acid molecule encoding an HPTK6 receptor protein tyrosine kinase having amino acid sequence SEQ ID NO:4 (Claim 31) or SEQ ID NO:8 (Claim 37). Applicants submit that Claims 31-44 are sufficiently enabled.

Rejection under 35 U.S.C. §112, second paragraph

On page 7 of the Office Action, in paragraph 6, the Examiner has rejected Claims 26-30 under 35 U.S.C. §112, second paragraph, as being indefinite.

To begin with, the Examiner asserts that Claims 26-30 are vague and indefinite because the specification does not identify the property or combination of properties which is unique to "a HPTK6 receptor protein tyrosine kinase". Additionally, the Examiner asserts that Claim 27 is indefinite because the limitation "stringent conditions" is conditional and the conditions are not specified in the claim or in the specification.

Applicants have canceled Claims 26-30, thereby rendering this rejection moot. Accordingly, the Examiner is respectfully requested to reconsider and withdraw this rejection.

In addition, Applicants have added new Claims 31-44. Applicants submit that these newly added claims recite an isolated nucleic acid molecule encoding an HPTK6 receptor protein tyrosine kinase having amino acid sequence SEQ ID NO:4 (Claim 31) or SEQ ID NO:8 (Claim 37).

New Claims 41-44 include the phrase "stringent conditions", which was rejected in the Office Action dated January 31, 2000 (i.e., Claim 27). However, Applicants submit that the recitation "stringent conditions" is definite, particularly when read in light of the present specification. According to case law, "a decision on whether a claim is invalid [for

indefiniteness] requires a determination of whether those skilled in the art would understand what is claimed when read in light of the specification.” (See Hybritech, Inc. v. Monoclonal Antibodies, 231 U.S.P.Q. 81 (Fed. Cir. 1986)).

In the present specification, the phrase “stringent conditions” is defined on page 18, lines 7-10 as 1) conditions that employ low ionic strength and high temperature washing or 2) employ a denaturing agent during hybridization. Thus, Applicants submit that the phrase “stringent conditions” as recited in new Claims 41-44 would be easily understood by one of ordinary skill in the art reading the specification.

In light of the above, Applicants submit that the present claims are sufficiently definite.

Rejection under 35 U.S.C. §102(a)

On page 8 of the Office Action, in paragraph 7, Claims 26-30 have been rejected under 35 U.S.C. §102(a) as being anticipated by Johnson et al. (1993).

In response to this rejection, Applicants submit that a rejection under 35 U.S.C. §102(a) may be overcome by filing an oath or declaration including facts showing a completion of the invention before the date of a printed publication upon which the rejection is based. (See 37 C.F.R. §1.131). It has long been held that an Applicant need only show sufficient possession of such part of the invention as a reference in question shows, in a Rule 131 affidavit. (See In re Stempel, 113 U.S.P.Q. 77 (CCPA 1957)).

In the attached Declaration Pursuant to 37 C.F.R. §1.131, Applicants have demonstrated conception and reduction to practice of the claimed subject matter prior to the effective filing date of Johnson et al. (June, 1993). Although this Declaration was originally filed in U.S.A.N. 08/447,314, Applicants submit that SEQ ID NO:4 and SEQ ID NO:8 disclosed in the Declaration is the same as SEQ ID NO:4 and SEQ ID NO:8 disclosed and claimed in the present application.

Applicants also submit that SEQ ID NO:4 and SEQ ID NO:8 were conceived of and reduced to practice prior to the publication of Johnson et al. The attached Declaration is therefore believed to evidence sufficient possession of the invention to remove Johnson et al. as a reference against the pending claims.

In view of the above, Applicants submit that Johnson et al. is not an effective reference and therefore respectfully request that this rejection be reconsidered and withdrawn.

Rejection under 35 U.S.C. §102(a)

On page 8 of the Office Action, in paragraph 8, Claims 26-29 have been rejected under 35 U.S.C. §102(a) as being anticipated by Di Marco et al. (1993).

In response to this rejection, Applicants submit that a rejection under 35 U.S.C. §102(a) may be overcome by filing an oath or declaration including facts showing a completion of the invention before the date of a printed publication upon which the rejection is based. (See 37 C.F.R. §1.131). It has long been held that an Applicant need only show sufficient possession of such part of the invention as a reference in question shows, in a Rule 131 affidavit. (See In re Stempel, 113 U.S.P.Q. 77 (CCPA 1957).

In the attached Declaration Pursuant to 37 C.F.R. §1.131, Applicants have demonstrated conception and reduction to practice of the claimed subject matter prior to the effective filing date of Di Marco et al. (November 15, 1993). Although this Declaration was originally filed in U.S.A.N. 08/447,314, Applicants submit that SEQ ID NO:4 and SEQ ID NO:8 disclosed in the Declaration is the same as SEQ ID NO:4 and SEQ ID NO:8 disclosed and claimed in the present application. Applicants also submit that SEQ ID NO:4 and SEQ ID NO:8 were conceived of and reduced to practice prior to the publication of Di Marco et al. The attached Declaration is therefore believed to evidence sufficient possession of the invention to remove Di Marco et al. as

a reference against the pending claims.

In view of the above, Applicants submit that Di Marco et al. is not an effective reference and therefore respectfully request that this rejection be reconsidered and withdrawn.

Rejection under 35 U.S.C. §102(b)

On page 8 of the Office Action, in paragraph 9, Claims 26-29 have been rejected under 35 U.S.C. §102(b) as being anticipated by Gilardi-Hebenstreit et al. (1992).

Applicants have canceled Claims 26-29, thereby rendering this rejection moot.

Additionally, Applicants submit that newly added Claims 31-44 are not anticipated by, or obvious over, Gilardi-Hebenstreit et al.

Gilardi-Hebenstreit et al. disclose the identification of a receptor PTK gene, *Sek*, which is expressed within two alternative segments in developing mouse embryo hindbrains. (See page 2499, column 2, lines 37-38 and page 2504, column 1, lines 24-27). Isolation and analysis of *Sek* cDNAs revealed that *Sek* encoded a putative receptor protein tyrosine kinase belonging to the Eph family. (See page 2499, column 1, lines 8-11). However, Gilardi-Hebenstreit et al. do not disclose or suggest an isolated HPTK6 receptor protein tyrosine kinase (rPTK) nucleic acid molecule that has the amino acid sequence SEQ ID NO:4 as claimed in Claim 31 or an isolated HPTK6 receptor protein tyrosine kinase (rPTK) nucleic acid molecule that has the amino acid sequence SEQ ID NO:8 as claimed in Claim 36.

Because a reference must contain each and every element of the claimed invention within the four corners of the document for the reference to be anticipatory and because Gilardi-Hebenstreit et al. do not disclose an isolated HPTK6 receptor protein tyrosine kinase (rPTK) nucleic acid molecule that has the amino acid sequence SEQ ID NO:4 or SEQ ID NO:8 as is presently claimed, Applicants submit that the present invention is not anticipated by, or obvious

over, Gilardi-Hebenstreit et al. and respectfully request that this rejection be reconsidered and withdrawn.

Rejection under 35 U.S.C. §103(a)

On pages 8-9 of the Office Action, in paragraph 10, Claim 30 has been rejected as being unpatentable over either Di Marco et al. or Gilardi-Hebenstreit et al. Specifically, the Examiner asserts that Di Marco et al. and Gilardi-Hebenstreit et al. describe an isolated cDNA encoding a receptor tyrosine kinase protein and the protein encoded thereby. The Examiner asserts that it would have been prima facie obvious to have expressed either of the cDNAs disclosed in the cited references in a recombinant host cell and to have recovered the protein encoded thereby by employing procedures that were old, well-known, and routine in the art to facilitate the characterization of that protein at a molecular level.

Applicants have canceled Claim 30, thereby rendering this rejection moot.

Applicants submit that newly added Claims 31-44 are not obvious over either Di Marco et al. or Gilardi-Hebenstreit et al.

As demonstrated above, Di Marco et al. is not an effective prior art reference.

With respect to Gilardi-Hebenstreit et al., this reference does not teach or suggest the novel isolated HPTK6 receptor protein kinase nucleic acid molecule having the sequence set forth in SEQ ID NO:4 or SEQ ID NO:8. The novel isolated HPTK6 receptor protein kinase having the amino acid sequence set forth in SEQ ID NO:4 and the amino acid sequence set forth in SEQ ID NO:8 are the starting materials for the preparation of HPTK6 rPTK in Claim 34 and Claim 39 respectively. Thus, the method for preparing HPTK6 rPTK requires the use of the new, nonobvious isolated HPTK6 receptor protein kinase nucleic acid molecule. Therefore, it would not have been obvious to one of ordinary skill in the art to choose the novel isolated HPTK6

receptor protein kinase molecule of Claim 31 or Claim 36 in a vector for the simple reason that this receptor protein kinase molecule was previously unknown. (See In re Ochiai, 37 U.S.P.Q.2d 1127 (CAFC 1995)). Consequently, the present invention is not obvious, and therefore patentable over Gilardi-Hebenstreit et al.

Conclusion

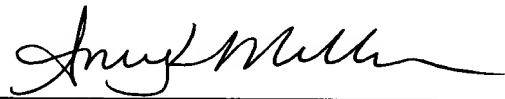
In light of the above, Applicants believe that this application is now in condition for allowance and therefore request favorable consideration.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,

LONG ALDRIDGE & NORMAN, LLP

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